# Proceedings

of the

Society

for

# Experimental Biology and Medicine

### INCLUDING THE FOLLOWING SECTIONS

CLEVELAND, O.

NORTHERN CALIFORNIA

DISTRICT OF COLUMBIA

Northwest

ILLINOIS

Ohio Valley

Iowa

ROCKY MOUNTAIN

MARYLAND

SOUTHERN

MICHIGAN

MINNESOTA

SOUTHWESTERN SOUTHWESTERN

Missouri

Western New York

SOUTHERN CALIFORNIA

NEW YORK

WISCONSIN

January-April 1973 (inclusive)

**VOLUME 142** 

New York

Copyright © 1973 by the Society for Experimental Biology and Medicine All Rights Reserved

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

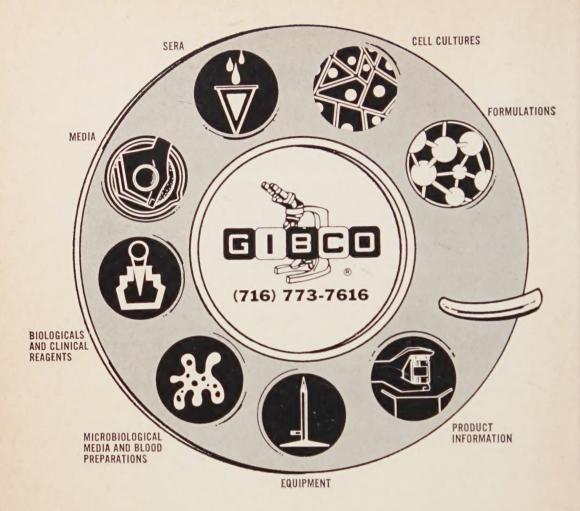
### CONTENTS

### SCIENTIFIC PROCEEDINGS, VOLUME 142

Six	hundred	twenty	third issue, January, 1973	1
Six	hundred	twenty	fourth issue, February, 1973	369
Six	hundred	twenty	fifth issue, March, 1973	731
Six	hundred	twenty	sixth issue, April, 1973	1051
Aut	hor's Inde	ex		1359

 $\begin{array}{c} & \text{Printed by} \\ \text{thomas j. griffiths sons, inc.} \\ & \text{Utica, N. Y} \end{array}$ 

Proceedings of the Society for Experimental Biology and Medicine, Vol. 142, No. 4, April, 1973. Published monthly except August at 104 Liberty St., Utica, N. Y. Second class postage paid at New York, N. Y. and at additional mailing offices. Subscription per year \$25, single numbers \$2.50. Send notices of change of address to the Office of the Publisher at least 4 weeks in advance. Please include both the old and new addresses. © 1973 by the Society for Experimental Biology and Medicine.



## One call—that's all!

Your complete source! All the materials, supplies and equipment you need for tissue culture, plus the famous GIBCO extras: QUALITY - assured by the strictest controls in the industry, AVAILABILITY - assured



SEND FOR **FREE 1973** CATALOGUE

by complete inventories on catalogue items... NO BACK ORDERS! SPEED - assured by expeditious shipment from strategic points. SERVICE - assured by a nationwide network of technically trained sales and service representatives. INNOVATION - assured by continual development of new and improved products for the expanding needs of biological research.

### GRAND ISLAND BIOLOGICAL COMPANY

A Life Science Division of The Mogul Corporation

3175 Staley Road, Grand Island, New York, 14072 • Phone: (716) 773-7616 Western Division: 519 Aldo Ave., Santa Clara, California, 95050 • Phone: (408) 247-9946

Pretested tissue cultures, media, serums and reagents—serving research, medicine and industry

from 3M research

# A new technique for circulation studies:



3M Brand Tracer Microspheres are small, uniformly-sized spherical particles labeled with a trace amount of a radioactive isotope. Injected into laboratory animals, the spheres make it possible to measure regional blood flow distribution without disturbing natural flow or moving individual organs.

3M Tracer Microspheres labeled with a choice of four different isotopes, including both GAMMA and BETA emitters, are readily available. All have a shelf life that enables experiments to be completed without significant loss in isotope activity. For detailed information about

For detailed information about 3M Tracer Microspheres, and a bibliography of the current

literature concerning their use, arranged by body organ, just complete and mail us the form.

Mail to: 3M Nuclear Products 3M Company, 3M Center Saint Paul, Minnesota 55101 Please send me further information on 3M Brand Tracer Microspheres.
Name  Position  Address  City  State  Zip
Or for immediate assistance call toll free number (800) 328-1671
Nuclear

AVAILABLE WORLDWIDE

Products

# THE TACONIC FARMS MOUSE SCALE

EASY TO READ, CARRY AND USE



For weighing mice, diets and other materials up to 40 grams PRICE \$20.00 (Plus Postage) Order directly from

### TACONIC FARMS, INC.

Germantown, New York 12526 Phone (518) 537-6208



for hospital, clinic and industrial laboratories only

### FREE TRIAL SUPPLY

See why Holtzman Rats are specified by more laboratories — they're the result of modern caesarian derivation, partial inbreeding, nutrition and animal husbandry.

All Holtzman Rats are air-shipped in close weight and age groups. Safe arrival and satisfactory quality guaranteed. Extra rats included.

Just fill out and mail coupon. Let us prove what we say.

P.	oltzman Company, De O. Box 4068 adison, Wisconsin 53711	pt. T
Air-Ship m	ne a free supply of the H	oltzman Rat. I
prefer	74	
i	(type)	
■ Name	Title	
Institution		
Address		
City	State	_Zip

### INDEX TO ADVERTISERS

Members and Subscribers are requested to cooperate with our advertisers.

Charles River Breeding Laboratories Cover 4	3M Companyv
Gibco, Division of the Mogul Corp iv	Microbiological Associates
Holtzman Companyvi	Taconic Farms

ANATOMY					
Quantitative Analysis of Cell Population in Mouse Intesti- nal Epithelium Using Citric Acid	S. TSUBOUCHI, T. MATSUZAWA 1301				
BIOCHEMISTRY					
Changes in Plasma Protein-Bound Carbohydrates and Gly- coprotein Patterns During Infection, Inflammation and Starvation	G. L. Cockerell 1072				
Study on Plasma Cyclic Nucleotide Concentrations in Fasting Rats	J. Turinsky				
Protein Synthesis in a Cell-Free System Derived from Rabbit Liver	A. C. WATKINS, R. G. KRUEGER 1235				
The Chemically Isolated Lamina Densa of the Renal Glo- merulus	B. K. Nicholes, C. A. Krakower, S. A. Greenspon				
Charge Heterogeneity of Human Low Density Lipoprotein (LDL)	S. GHOSH, M. K. BASU, J. S. SCHWEPPE 1322				
Origin of Amniotic Fluid Lipids. III. Fatty Acids	J. J. Biezenski				
Depression of the Intestinal Uptake of Radio-vitamin B <sub>12</sub> by Cholestyramine	A. CORONATO, G. B. J. GLASS 1341				
The Effect of Deconjugated and Conjugated Bile Salts on the Intestinal Uptake of Radio-vitamin B <sub>12</sub> in Vitro and in Vivo	A. CORONATO, G. B. J. GLASS 1345				
ENDOCRINOLO	OGY				
Suppression of Proestrous and Suckling-Induced Increase in Serum Prolactin by Hypothalamic Implant of Pro- lactin	J. L. VOOGT, J. MEITES 1056				
$\Delta^5$ -3 $\beta$ -Hydroxysteroid Dehydrogenase Activity in the Adrenal Cortex of the Sodium-Restricted Pregnant Rat.	D. G. POHANKA, H. SMICIKLAS-WRIGHT, R. L. PIKE				
The Effect of Colchicine on the Release of Rat Anterior Pituitary Hormones in Vitro	D. K. SUNDBERG, L. KRULICH, C. P. FAWCETT, P. ILLNER, S. M. McCANN 1097				
Properties of Density Gradient Separated Liver Mitochon- dria from Triiodothyronine-Treated Rats	T. S. Ruh, M. F. Ruh, H. M. Klit- GAARD 1128				
The in Vitro Effect of Insulin on Collagen Synthesis in Embryonic Chick Tibia	J. S. Perlish, R. I. Bashey, R. Fleisch- majer				
Changes in Peripheral Plasma Progesterone During the Rat 4-Day Estrous Cycle: An Adrenal Diurnal Rhythm	D. R. Mann, C. A. Barraclough 1226				
ENZYMOLOGY					
Zing Of Counties by the Expering Penerges of Chicks Fed	A. J. SALMAN, R. FERNANDEZ, J. Mc-				
Zinc 65 Secretion by the Exocrine Pancreas of Chicks Fed Soybean Meal	GINNIS				
Regulation of Myocardial Prostaglandin Dehydrogenase Activity. The Role of Cyclic 3',5'-AMP and Calcium Ions	C. J. LIMAS, J. N. COHN				
HEMATOLOGY					
T. T. D. Communication of the					
Binding of Bilirubin to Erythrocytes	R. J. ELIN				
Erythrocyte Survival in Magnesium-Deficient Rats Survival of Washed Rabbit Platelets in Vivo	H. J. REIMERS, M. R. BUCHANAN, J. F. MUSTARD 1222				

### IMMUNOLOGY

Cryoprecipitates and Immune Complexes: Decrease in Antibody Bound <sup>181</sup> I-Labeled BSA Antigen After Cryoprecipitation in Rabbit Serum	W. R. GRISWOLD, K. C. HSU, R. M. MC- INTOSH 1292			
Effect of Immunosuppressive Drugs on a Localized Graft- Versus-Host Reaction in the Rat	K. F. SWINGLE, T. J. GRANT, P. M. VALLE			
MICROBIOLOG	GY			
Virus Resistance in Rabbit Kidney Cell Cultures Contaminated by a Protozoan Resembling Encephalitozoon cuniculi	J. A. ARMSTRONG, Y-H. KE, M. C. BREINIG, L. OPLE 1205			
Multiplication of Toxoplasmas in Enucleate Fibroblasts	T. C. Jones 1268			
Thymidine Kinase Activity in Burkitt Lymphoblastoid So- matic Cell Hybrids After Induction of the EB Virus	R. GLASER, T. OGINO, J. ZIMMERMAN, JR., F. RAPP 1059			
NUTRITION				
Protein, as a Regulator of Pancreatic Enzyme Secretion in the Rat	G. M. GREEN, B. A. OLDS, G. MATTHEWS, R. L. LYMAN			
ONCOLOGY				
6-Methyl-8-β-ergoline-acetonitrile-Induced Inhibition of Mammary Hyperplastic Alveolar Nodular Develop- ment and Growth in C3H/HeJ Female Mice	C. W. Welsch, J. A. Clemens 1067			
Effect of Dietary Carbohydrate on Fatty Acids in the R3230AC Mammary Adenocarcinoma	D. Zalenski, R. Hilf 1137			
Chromosome Aberrations in Xeroderma Pigmentosum Cells Exposed to the Carcinogens 4-Nitroquinoline-1-oxide and N-Methyl-N'-nitro-nitrosoguanidine	H. F. STICH, W. STICH, R. H. C. SAN 1141			
Reutilization of Thymidine and Iododeoxyuridine by Mouse Mammary Carcinoma Strain MTG-B	K. H. CLIFTON, J. M. COOPER 1145			
Gonadotropic Activities of Thyrotropic Tumors; Demonstration by Immunohistochemical Staining	J. Furth, P. Moy, D. S. Schalch, G. UEDA			
Antitumor Action of Dichloro (4,5-dimethyl- $o$ -phenylene-diamine- $N$ , $N'$ ) platinum(II)	G. R. GALE, L. M. ATKINS, E. M. WALKER, JR., A. B. SMITH, S. J. MEISCHEN			
Comparative Evaluation of Particulate and Bacterial Op- sonization by Plasma of Normal and Neoplastic Indi- viduals	J. C. PISANO, J. P. JACKSON, N. R. DI LUZIO			
PATHOLOGY				
Influence of Polyinosinic:Polycytidylic Acid on the Circulating White Blood Cells in Mice	M. Degre 1087			
Oxygen Consumption of Human Leukocytes from Blood, Lymph Nodes, and Patients with Leukemia	A. E. EVANS, J. BLORE 1118			
Effect of Zinc on the Viability and Phagocytic Capacity of Peritoneal Macrophages	L. KARL, M. CHVAPIL, C. F. ZUKOSKI . 1123			
Role of Ceruloplasmin (Plasma Ferroxidase) in Hypofer- remia Associated with Chronic Inflammation and En- dotoxin	H. P. Roeser, G. R. Lee, G. E. Cart- wright 1155			
Production of Perforating Duodenal Ulcers by 3,4-Tolu- enediamine in the Rat	H. SELYE 1192			

### PATHOLOGICAL PHYSIOLOGY

TATHOLOGICAL TH	ISIOLOGI
The Physiological Basis of Urinary Bladder Hypertrophy	R. J. Goss, M. D. Liang, S. J. Weis- Holtz, T. J. Peltzer
PHARMACOLO	GY
The Effect of a New Anti-androgen on Canine Prostatic Acid Phosphatase	J. R. Brooks, R. D. Busch, B. Lopez- Ramos, W. R. Holt, S. L. Steel- Man, D. J. Patanelli
Purification of Antibacterial Compounds from Calf Liver	M. L. Kornguth, C. M. Kunin 1088
Chronic Effects of Monocrotaline Pyrrole on Hepatic Mitosis and DNA Synthesis	I-C. HSU, C. F. CHESNEY, J. R. ALLEN 1133
Characteristics of the Binding of Dapsone and Mono- acetyldapsone by Serum Albumin	R. W. RILEY, L. LEVY 1168
Effect of Ethanol on Intestinal Adenosine Triphosphate (ATP) Content	E. A. CARTER, K. J. ISSELBACHER 1171
The Antiarrhythmic Effect of Lithium Chloride for Experimental Ouabain-Induced Arrhythmias	R. A. POLUMBO, A. BRANZI, J. S. SCHROEDER, D. C. HARRISON 1200
Nature of the Morphine Receptor Present in the Squid Axon	D. T. Frazier, M. Ohta, T. Narahashi 1209
Pontile Pneumotaxic Center Regulation of Doxapram-In- duced Respiratory Alterations	W. M. St. John, M. H. Cunningham, J. W. Johnson, R. L. Glasser 1215
The Effect of Tobacco Smoke on Protein Synthesis in Macrophages	P. G. HOLT, D. KEAST 1243
Release of Histamine From Mast Cells by Vasoactive Pep- tides	A. R. Johnson, E. G. Erdos 1252
Ocular Defects in Newborn Rats Treated with 5-Iodode- oxyuridine (IUDR).	D. H. PERCY, D. M. ALBERT, T. AME- MIYA
Teratogenic Compounds of Veratrum californicum (Durand). XIV. Limb Deformities Produced by Cyclopamine	R. F. KEELER 1287
Effect of Aminoglutethimide on Norepinephrine Turnover in the Rat Heart	T. C. Westfall, T. C. Lewis 1295
PHYSIOLOG	GY
Transcellular Ion Transport and Bioelectric Potential	T. K. Chowdhury 1051
Significance of Amino Acid Residues in Position 8 of Vaso- pressin on Contraction in Rat Blood Vessels	B. M. ALTURA 1104
Plasma Protein Escape from the Intestinal Circulation to the Lymphatics During Fat Absorption	A. WOLLIN, L. B. JAQUES 1114
Dependence of Skeletal Muscle Vascular Response to Sero- tonin Upon the Level of Vascular Resistance	T. E. EMERSON, JR., P. D. MEIER, R. M. DAUGHERTY, JR
The Role of Endogenous Histamine on Gastric Acid Secretion	L. Limlomwongse, A. Thithapandha, P. Sobhon
Effects of Carotid Occlusion on the Renal and Iliac Vascular Resistance During Constant Flow and Constant Pressure Perfusion	J. E. Kendrick, G. L. Matson 1306
Role of ADH in the Loss of Renal Concentrating Ability in Primate Hemorrhagic Shock	E. E. Selkurt
Threshold Levels of NaCl Upholding Solute-coupled Water Transport in the Cecum of Germfree and Convention-	S. Nakamura, H. A. Gordon 1336

### TISSUE CULTURE

A Method for the Selection of a Synchronized Population of Cloning HeLa Cells	A. M. BADGER, S. R. COOPERBAND 1240
VIROLOGY	
Syncytial Giant Cell Focus Assay for Viruses Derived from Feline Leukemia and a Simian Sarcoma	S. R. S. RANGAN, P. J. UEBERHORST, M. C. WONG
Immunohistochemical Demonstration of Avian Leukosis Virus Antigens in Paraffin Embedded Tissue	H. S. DI STEFANO, A. A. MARUCCI, R. M. DOUGHERTY
A Useful Quantitative Semimicromethod for Viral Plaque Assay	B. RAGER-ZISMAN, T. C. MERIGAN 1174
The Effects of an Acid pH upon the Induction of Anti- viral Resistance in Vitro by Interferon	P. Brown, F. Besancon, C. Chany 1195
Etiologic Relationship of Marmoset-Propagated CR326 Hepatitis A Virus to Hepatitis in Man	P. J. Provost, O. L. Ittensohn, V. M. VILLAREJOS, J. A. ARGUEDAS G., M. R. HILLEMAN
In Vitro Transformation of Canine Embryo Cells by Mu- rine Sarcoma Virus (Kirsten)	F. G. Duh, M. L. Vernon, J. S. Rhim 1277